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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/828,271 | 04/05/2001 | Vijayan Rajan | 103.1063.01 | 6350 |

22883 7590 07/15/2004
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| EXAMINER |
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VO, LILIAN

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2127

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,271

Applicant(s)

RAJAN ET AL.

Examiner

Lilian Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/5/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 072001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 29 are pending.

Specification

2. The attempt to incorporate subject matter into this application by reference to an application attorney docket number (page 9, lines 1 – 2) is improper. Applicants need to update the specification with an application serial number.

Drawings

3. The drawing (fig. 1) is objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: tasks 121 (page 2, lines 14, 15, 19 and 20). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 – 4, 7 and 12 - 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. **Claim 1** recites the limitation "said task" in page 29, line 6. There is insufficient antecedent basis for this limitation in the claim.

7. **Claims 2, 7 and 13** recite the limitation "said association" in page 29, line 11 and page 30, line 9, page 31, line 14, respectively. There is insufficient antecedent basis for this limitation in the claim.

8. **Claim 12** recites the limitations "said task" and "said processor", in page 31, lines 9 and 10. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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10. Claim 23 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 23 simply recites a statement that fails to distinctly claim a process, machine or manufacture.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1 – 9, 11 – 15, 17 – 21 and 23 – 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Frank et al. (US 5,790,851, hereinafter Frank).

13. Regarding **claim 1**, Frank discloses a method including:

selecting tasks from a set thereof for running on a plurality of processors each having access to a shared resource (col. 6, lines 4 – 29, 44 – 48);

wherein each task is associated with one of a plurality of scheduling domains (col. 6, lines 4 – 29, 44 – 48, 57 – 62, figs. 2B and 2C); and

prohibiting more than one task associated with the same scheduling domain from running concurrently (col. 8, lines 15 – 29, 43 – col. 9, lines 11 and figs. 5, 6A and 6B).

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14. Regarding **claim 2**, Frank discloses a method of claim 1, including changing said association for at least one task from a first to a second scheduling domain (col. 6, lines 4 – 14, and 43 – 62).

15. Regarding **claim 3**, Frank discloses a method of claim 1, including selecting for running at least one task associated with a plurality of said scheduling domains (col. 6, lines 4 – 29, 44 – 48, 57 – 62, col. 8, lines 15 – 29, 43 – col. 9, lines 11, figs 8).

16. Regarding **claim 4**, Frank discloses a method of claim 1, including selecting for running at least one task not associated with any one of said scheduling domains (col. 6, lines 57 – 62, col. 12, lines 4 – 15, col. 13, lines 11 - 16).

17. Regarding **claim 5**, Frank discloses a method including altering a program code base, said program code base defining a plurality of tasks and a set of data structures at least some of which are shared, to include implicit synchronization among said tasks to said data structures (col. 6, lines 4 – 29, 44 – 48, 57 – 62, col. 8, lines 15 – 29, 43 – col. 9, lines 11).

18. **Claims 6 – 9, 11 – 15, 17 - 21 and 23 - 28** are rejected on the same ground as stated above.

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19. Claims 5 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Rehg et al. (US Pat. Application Publication 2002/0091748, hereinafter Rehg).

20. Regarding **claim 5**, Rehg discloses a method including altering a program code base, said program code base defining a plurality of tasks and a set of data structures at least some of which are shared, to include implicit synchronization among said tasks to said data structures (page 3, paragraph 0050, page 4, paragraphs 0052 – 0053).

21. Regarding **claim 23**, Rehg discloses implicit synchronization (page 4, paragraph 0053).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 10, 16, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank et al. (US 5,790,851, hereinafter Frank) in view of Zolnowsky (US 5,826,081).

24. Regarding **claim 10**, Frank discloses of reservation queue and also a task queue within a task (col. 10, lines 9 – 12, 52 – 63). Frank however did not clearly disclose that there is a runnable queue for each scheduling domain. Nevertheless, Zolnowsky discloses a system with a

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plurality of runnable queues, each is associated with a processor (col. 5, lines 26 – 37, col. 7, lines 50 – 59, fig. 5).

It would have been obvious for one of an ordinary skill in the art, at the time the invention was made to incorporate Zolnowsky's teaching to Frank to implement with a plurality of runnable queues to prevent race conditions and minimize lock contention with a single runnable queue while assuring that processes are executed as quickly as possible among the plurality of runnable queues.

25. **Claims 16, 22 and 29** are rejected on the same ground as stated above.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 703-305-7864. The examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

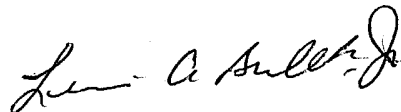
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo
Examiner
Art Unit 2127

lv
June 30, 2004

A handwritten signature in cursive script, appearing to read "Lilian Vo", is written over the printed name and title.